



# WATER & SEWER

*The Water & Sewer Department is dedicated to providing quality, reliable, customer-convenient water and sewer service to its customers that represents extraordinary value. We will remain the premier Water & Sewer utility in the region.*

## DEPARTMENT GOALS AND OBJECTIVES

1. Provide a safe and adequate supply of drinking water. [\(Strategic Priority II and III\)](#)
  - a. Meet or exceed all drinking water standards 100% of the time.
  - b. Meet demand 365 days per year.
  - c. Maintain adequate supply to support future growth.
2. Ensure that all wastewater effluent released into the Arkansas River has been adequately treated. [\(Strategic Priority II and III\)](#)
  - a. Be in compliance with all NPDES requirements 100% of the time.
3. Satisfy customers by providing reliable, courteous and convenient services. [\(Strategic Priority III\)](#)
  - a. Minimize the number of main breaks.
  - b. Minimize the number of sewer stoppages.
  - c. Decrease telephone response time.
4. Operate the Water & Sewer Utilities in a financially responsible manner. [\(Strategic Priority III\)](#)
  - a. Maintain a Utility debt service coverage ratio of at least 1.2.
  - b. Minimize the average monthly residential water & sewer bill.
5. Support the City's economic and social development strategies. [\(Strategic Priority I\)](#)
  - a. Provide infrastructure for economic development.

## PERFORMANCE MEASURES



Environmental Protection Agency (EPA)



Peer City



City of Wichita - Internal Benchmark



American Water Works Association

Dept.	Objective	Program Measure Description	Benchmark	2004 Actual	2005 Projected	2006 Target	2007 Target
	1a	% of days met drinking water standards	100%	100%	100%	100%	100%
	1b	% of daily demand met	100%	100%	100%	100%	100%
	1c	% of maximum capacity used	≤ 80%	66.9%	66%	70%	70%
	2a	% of days in compliance with NPDES	100%	100%	100%	100%	100%
	3a	# of main leaks per 100 miles of main	50 (Midwest avg)	30	28	27	26
	3b	# of sewer stoppages & backups per 100 miles	8 (Midwest avg)	20	19	18	18
	3c	% of telephone calls abandoned	14.1% (10 year avg.)	6.3%	6.0%	5.5%	5.0%
	4a	Combined debt service coverage ratio	1.2	1.44	1.39	1.33	1.37
	4b	Monthly avg. residential water & sewer bill	\$36.20	\$25.23	\$26.82	\$28.16	\$29.57
	5a	Amount spent on development-related infrastructure	N/A	\$4 million	\$7 million	\$16 million	\$10 million



## RECENT ACCOMPLISHMENTS

- An AA- bond rating from Standard & Poor's, one of the few such ratings for any utility in the country. This reflects a high degree of fiscal and operational management; regular and systematic infrastructure maintenance, replacement and renewals; and a willingness to invest as needed to maintain a healthy utility.
- Water Taste & Odor Control: Following a series of extended taste and odor events related to algae in Cheney reservoir, the City began feeding Powdered Activated Carbon to the drinking water until ozonation facilities could be designed and constructed. These facilities were constructed in the spring and went on-line June 2005.
- Future Water Supply: The City has a multi-year, more than \$300 million, multi-faceted plan to ensure adequate water supply through the year 2050. Efforts to-date include a successful pilot program to determine the feasibility of an Aquifer Recharge Program, among other on-going programs. The Aquifer Recharge Program is currently in the permitting process; once permits are obtained, actual construction will begin.
- Rehabilitation of Sewage Treatment Plant 1: Extensive rehabilitation involved additional odor control, pumping solids to Plant 2 for processing, improvements to primary treatment and an upgrade of the electrical system.
- Sewage treatment plant siting studies: The City Council recently approved the purchase of two sites for additional sewage treatment plants.
- IVR – Customer Information Telephone Access: Customers may now use a brief telephone touch menu to obtain account information without having to wait for a customer representative to assist them.
- Credit card bill payment: Customers may now pay bills using credit or debit cards.
- Web access to account information: Customers may now access their account information online, and will soon be able to pay their bill online.
- Water Distribution and Sanitary Sewer System Rehabilitation: The utility has a systematic program for rehabilitating infrastructure. Water leaks and sewer stoppages have decreased significantly over the past few years due to these ongoing efforts.

- Hess Motor replacements: The motors at Hess Pump Station have all been replaced with automated motors, resulting in smoother reaction to changes in system demand which in turn causes less stress to the distribution system and fewer leaks.
- Sewage Treatment Plant #3 Awards: The recently constructed Cowskin Creek Water Quality Reclamation Facility has won several awards for innovative design.
- NE Elevated Storage Tank: An elevated storage tank was recently completed to increase water pressure in far northeast Wichita, where there is ongoing industrial, medical and residential development.



*The water treatment plant at Sim Park.*

## OVERVIEW

The Water and Sewer Department supplies and distributes high quality water, and collects and treats wastewater for the City of Wichita and areas surrounding Wichita which are part of the Water and Sewer Utilities. Services provided include pumping and purifying water, maintaining the water distribution and wastewater collection systems, treating wastewater and planning for future needs.

The Water Utility produces, treats, and distributes more than 20 billion gallons of water per year, on average, for its customers. In 2004, the Utility delivered 20.6 billion gallons of water to customers. The Sewer Utility collects and treats more than 15 billion gallons per year from its customers. In 2004, the Utility treated 14.0 billion gallons. Service levels, and water consumption in particular, are driven primarily by system growth rates as well as weather conditions that

*Water produces, treats and distributes more than 20 billion gallons per year. Sewer collects and treats more than 15 billion gallons per year.*



affect consumption patterns. Despite the large volume of water produced and sewage treated, the Water & Sewer Utilities consistently exceed environmental regulations, often before such regulations are put into effect. This proactive approach assists in planning and helps to ensure that Utility customers receive excellent service value.

Extensive capital improvement planning ensures the Water and Sewer Utilities will continue to provide high quality water production and distribution, and sewage collection and treatment well into the future. Currently the City has a Water Supply Plan in place to support growth and development through 2050. Additional sewerage facilities are also planned to respond to increasing needs and to continue to meet or exceed environmental regulations.

## DIVISION DESCRIPTIONS

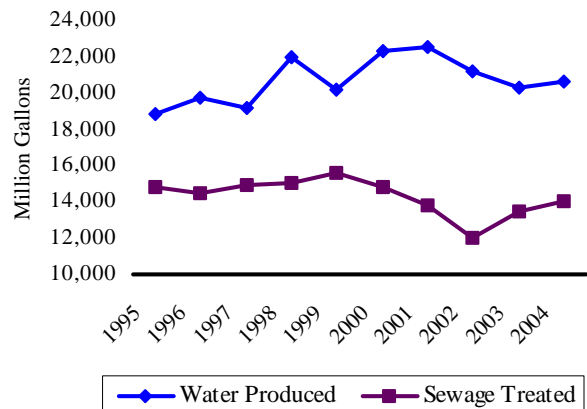
The Water & Sewer Department is organized into six divisions: Administration; Customer Service; Water Distribution; Production and Pumping; Sewer Maintenance; and Sewage Treatment.

**ADMINISTRATION:** Administration provides direction and service for the entire utility. The Director focuses the efforts of the utility so that the mission is accomplished in accord with City Council direction, as well as State and Federal regulations, and with future needs always in mind. The Director also monitors the fiscal health of the utility as well as operational efficiency and policy compliance. The System Planning and Development section maintains records of underground water & sewer lines, as well as storm sewers and traffic light cables. In addition, they monitor the capacity of the system, plan capital improvements, and maintain and upgrade extensive infrastructure databases.



*Water is delivered to citizens, thanks to dedicated staff and investments in equipment such as this 2,000 horsepower pump at Hess Pump Station. This pump alone handles approximately 30,000 gallons of water per minute.*

### Water & Sewer Service History



**CUSTOMER SERVICE:** Customer Service is responsible for the revenue management functions of the Water and Sewer Utilities. This includes reading and billing over 135,000 customers each month and annual generation of over sixty million dollars in revenue. The Division's 81 employees read approximately 6,500 meters each day; take 800 phone calls from customers; and work roughly 300 customer service requests daily. Division personnel also staff 2<sup>nd</sup> shift and weekend dispatch and emergency response functions.

**WATER DISTRIBUTION:** Water Distribution operates and maintains the pipe network that transports potable water from the Water Treatment Plant to customers in an approximately 200 square mile area of Kansas. The goal of the division is to provide the maximum level of service by responding promptly to customer requests for service, maintain water appurtenances in the system for dependable fire protection, modify the distribution system as needed for building and road projects, and extend the useful life of the entire potable water system.

Service Crews install and maintain two-inch and smaller piping from the water mains to the service meter for approximately 161,000 customers. Mains Crews install, maintain, and modify 1900 miles of water mains, ranging in size from two inch to 24 inch, 12,000 fire hydrants, and 40,000 water valves. The Division maintains two crews on standby during weekends and holidays to respond to emergency calls of customers. Water Distribution also administers the Cross Connection/Backflow Prevention Program.

**PRODUCTION AND PUMPING:** The Production & Pumping division monitors the raw water supply in the Equus Beds Wellfield and Cheney Reservoir, as well as several local wells, and operates and maintains the delivery system that transports the raw water to the water treatment plant. They also operate



and maintain the water treatment plant, which cleans, purifies and softens the water to meet or exceed all federal drinking water standards. In addition, they are responsible for pumping the water into the system and maintaining adequate water pressure throughout the service area, using several pump stations as well as ground and elevated storage reservoirs. The division also includes a certified laboratory that monitors water quality.

All of this is accomplished using a staff of 47 employees who operate the plant 24 hours a day, 365 days per year. In 2004, the division purified and delivered more than 21 billion gallons of water to our customers.



*The Cowskin Creek Water Quality Reclamation Facility, opened in 2003, is considered to be the most advanced wastewater treatment plant in the region.*

**SEWER MAINTENANCE:** Sewer Maintenance operates and maintains the pipe network that transports wastewater from customers to treatment plants. The goal of the Division is to provide the public an acceptable level of service by responding promptly to customer requests, minimizing the volume of storm and groundwater carried to the treatment plants, eliminating backups and overflows, and extending the useful life of the entire sewer system.

The division operates and maintains the wastewater collection network with 82 people assigned to 34 crews working first and second shift, with personnel on standby during third shift and weekends. Crews respond to emergency calls and special customer requests, perform systematic maintenance activities that include cleaning, televising, root control and flushing, and repair defects and remove inflow and infiltration sources as these are discovered.

**SEWAGE TREATMENT:** The Sewage Treatment division operates and maintains the City's four sewage treatment plants: Sewage Treatment Plant #1 (3100 S. Grove), Sewage Treatment Plant #2 (2305 E. 57<sup>th</sup> St. South), Four Mile Creek

(15800 East Harry) and the Cowskin Creek Water Quality Reclamation Facility (4182 N. 135<sup>th</sup> St. West). Fifty-six sanitary lift stations located throughout the collection system are also operated and maintained by the division.

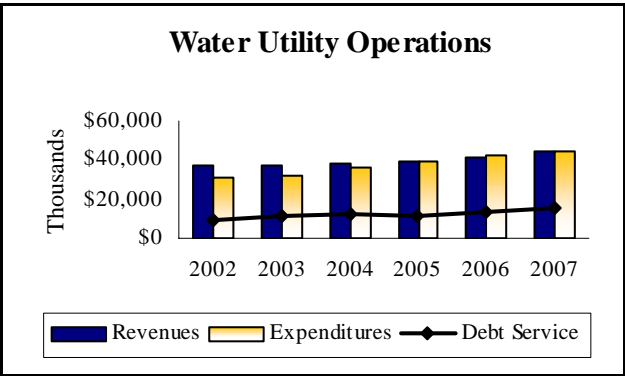
The division manages the City's Industrial Pretreatment Program, Biosolids Land Application Program, Grease Interceptor Program, Silver/Mercury Reduction Program, Surface Water Quality Program, and Storm Water Sampling and Inspection Program. The division maintains a certified laboratory that conducts process control, NPDES, and contractual analysis for industry.

*The Cowskin Creek Water Quality Reclamation Facility is considered to be the most advanced wastewater treatment plant in the region.*

The Division has a budgeted staff of 75 employees, including operational staff 24 hours per day, year-round. Electrical and mechanical maintenance staff are on call during off hours for plant and lift station emergency response.

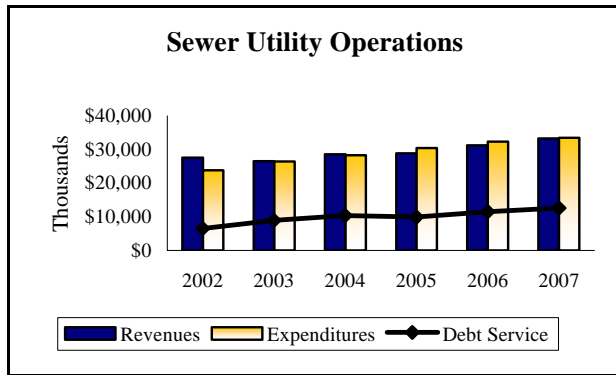
**FINANCE AND OPERATIONS**

The Water Utility operating budget reflects a significant change due to the implementation of the Ozone facility for taste and odor, allowing for the elimination of Powdered Activated Carbon (PAC). Despite the need for an increase in electricity for the Ozone facility, the savings from the refinancing of debt as well as the deferral of bond sales allows for the Utility to provide for a zebra mussel control study as well as filter bay improvements and a federally mandated digital postage meter.



The Sewer Utility budget also reflects a substantial decrease due to the refinancing of debt and the deferral of bond sales. Despite an industry wide shortage of acrylic acid, causing the price of this type of polymer to increase, the Utility is able to absorb these costs through the debt restructuring and the deferral of launder covers used for algae growth at the treatment plants.





Revenues can fluctuate greatly due to the nature of the Utilities dealing directly with peak periods (normally a four month period where water usage is high during the summer months). Higher rainfalls at specific times in the year can directly effect the amount of water that is produced thus resulting in lower sales; however, one hot, dry month can also equate to extremely higher usage and thus increased revenues. This makes revenue forecasting more difficult and can help explain the fluctuations from year to year.

Since 1993 the utility has averaged 1.4 percent annual increase in the customer base, mainly due to the rapid development on the edge of the city. Note: a wholesale customer equates to only one customer, no matter how many customers that wholesale entity serves. To maintain this growth rate, however, due to the size of the base, there would need to be higher overall growth in the region.

Current wholesale customers include: Bel Aire; Bentley; Benton; Derby; Kechi; Park City; Rose Hill; Valley Center; Sedgwick RWD # 1; Sedgwick RWD # 3; and Butler RWD # 8. We also serve as direct customers the following jurisdictions: Andover, Oaklawn, Sunview, and Eastborough.

The Water and Sewer utilities are facing capital costs in the coming years for refurbishment of existing infrastructure, and expansion of infrastructure to accommodate urban growth. Debt service is the largest single variable affecting the rate structure of each utility.

The current Capital Improvement Program provides for several projects during this operating budget, such as



*The City invested more than \$7.5 million in an Ozone facility at the Cheney Reservoir Pump Station to eliminate taste and odor events and improve the system.*

\$34 million for the Water Supply Plan, \$3 million for the construction of the Northwest Elevated Storage Tank, \$23.5 million for the Mid-Continent Sewage Treatment Plant, \$30 million for mains to support new development, \$15 million for water main replacement and rehabilitation, \$7.7 million for water pressure booster pump stations, \$13.2 million for reconstruction/rehabilitation of existing sewers, and \$8 million for required security enhancements, representing sound utility planning to support long-term growth and development.

Annual Water & Sewer Rate Increases Projected for 2005-2006				
	2004	2005	2006	2007
Water Rate Increases	7%*	0%	6%	7%
Sewer Rate Increases	3%	3%	7%	6%
* - In 2004 the Council approved an additional 4% rate to cover taste and odor issues.				
Bonded Debt Service Coverage Ratio (must equal or exceed 120%)				
	2004	2005	2006	2007
Water Coverage Ratio	163%	156%	144%	148%
Sewer Coverage Ratio	115%	119%	120%	125%
Combined Coverage Ratio	141%	139%	133%	138%
2005 Water Rate Structure Cost per thousand gallons				
	Inside-City Rate		Outside-City Rate	
Block 1 (0-110% AWC)	\$0.74		\$1.17	
Block 2 (111-310% AWC)	\$2.66		\$4.20	
Block 3 (above 310% AWC)	\$4.00		\$6.31	



Funding these projects, however, will result in short-term financial impacts in terms of urgency to increase rates. The City's utilities are facing an "intergenerational equity" issue with current utility customers bearing a disparate share of the costs associated with financing these major capital improvements that will also benefit future utility customers.

*The City has a Water Supply Plan in place to support growth and development through 2050.*

The budget recommendation assumes issuance of regular 20-year revenue bonds. Due to issues including intergenerational equity and useful project life, some projects may be paid for with 25-year bonds. This reduces annual debt service costs and more equitably spreads the cost of projects with 40-50 year useful life. Actual issuance date for the bonds and length of time notes are required will depend on a variety of factors including market conditions and progress with the capital projects.

Water rates are based on a customer's average winter consumption (AWC), which is defined as the mean monthly consumption calculated during the months of December, January, February and March. The AWC is calculated in April and is used as the basis for billings in the following twelve months. The minimum monthly AWC for any metered service on a meter sized at one inch or less is 6,000 gallons. In addition, a minimum monthly charge is assessed for all customers regardless of consumption. The water rate increases as consumption moves up from one block to the next. The AWC rate structure is designed to encourage conservation by imposing a penalty on excessive water usage.

*Projected higher debt service obligations are the primary variable affecting the need for rate adjustments.*

In 2004 the Utility presented the need for rate adjustments to the Council after the Budget had already been adopted and proposed a 0% increase in Water and a 5% increase in Sewer. The Budget had included an increase of 4% in Water and 3% in Sewer. The City Council chose to offer a rate holiday by providing for no increase in Water rates and a 3% increase in Sewer rates.

For this Operating Budget the Utility chose to present its rates to the Council in conjunction with the Budget approval process. The Utility projected rates of 6% for Water and 7% for Sewer in 2006. This is due to the large growth on the capital side, as rates are driven by the capital budget and debt coverage.

Any future rate changes will be subject to review and approval by the City Council.

Because of sound fiscal management and planning for future capacity and financing needs, the Water and Sewer Utilities are in a solid financial position, as is evident through the assignment of a AA-rating by Standard & Poor's Ratings Services in 2005.

This higher bond rating reduces overall debt service costs by reducing the interest rate at which debt can be issued in any given year. Part of this financial strategy involves partial financing of capital improvements through cash reserves, which further reduces the cost of improvements by eliminating bond issuance and interest costs.

*A 1% water rate increase impacts the average residential customer by about \$0.13 per month. Therefore, a 6% increase equates to \$0.78 per month.*

*A 1% sewer rate increase impacts the average residential customer by about \$0.10 per month. Therefore, a 7% increase equates to \$0.70 per month.*

Revenue bond covenants require that after operating and maintenance expenses, net annual revenues must equal at least 120 percent of the annual debt service payments for principal and interest. This is the bonded debt coverage ratio. A higher ratio provides a cushion against fluctuations in utility revenues, which can be significant given the impact of weather changes on utility revenues.

Bond rating agencies and the bond market typically rate utilities as superior if the bond coverage ratio is relatively high. Although recent capital expenses have been significant, and the Sewer Utility ratio could fall below the 120 percent threshold, the combined Water and Sewer ratio will stay above 120 percent through the planning period.

## FUTURE CHALLENGES

- Continuation of the implementation of the Water Supply Plan.
- Construction of water and sewer mains to allow for ongoing growth and development.
- Improvements to the distribution system to improve water pressure as the service area grows, including larger transmission mains, elevated storage and booster pump stations.
- Systematic rehabilitation and replacement of aging infrastructure.
- Construction of the Mid-Continent Sewage Treatment Plant.
- Ongoing efforts to ensure the security of utility facilities.



### Sewer Utility Fund Budget Summary

	2004 Actual	2005 Adopted	2005 Revised	2006 Adopted	2007 Approved
Sewer Fund Revenue	28,593,011	29,373,700	28,850,010	31,223,210	33,262,920
Personal Services	8,618,382	8,887,310	8,797,850	9,263,000	9,744,740
Contractual Services	4,223,393	4,656,150	4,768,110	4,872,290	4,690,970
Commodities	2,078,553	2,409,320	2,476,950	2,412,520	2,321,830
Capital Outlay	534,758	1,802,870	1,532,020	1,189,060	882,880
Other	12,838,386	13,985,540	12,873,980	14,604,230	15,809,460
Total Sewer Fund Expenditures	28,293,472	31,741,190	30,448,910	32,341,100	33,449,880
Revenue Over (Under) Expenditures	299,539	(2,367,490)	(1,598,900)	(1,117,890)	(186,960)
Transfer to (from) Reserves	299,539	(2,367,490)	(1,598,900)	(1,117,890)	(186,960)
Total full-time positions	157	157	157	157	157
Total part-time positions	2	2	2	2	2
Total FTE positions	158	158	158	158	158

*Note: There were no position changes.*

### Water Utility Fund Budget Summary

	2004 Actual	2005 Adopted	2005 Revised	2006 Adopted	2007 Approved
Water Fund Revenue	37,949,927	41,273,700	38,874,880	41,417,180	44,749,010
Personal Services	7,512,545	8,413,700	8,532,700	9,081,010	9,353,730
Contractual Services	6,529,578	7,733,750	8,075,330	8,688,810	8,046,980
Commodities	2,899,970	4,188,470	3,744,330	3,649,180	3,614,530
Capital Outlay	2,719,035	1,102,240	1,114,190	1,173,930	768,450
Other	16,566,658	21,041,030	18,127,830	19,938,450	22,491,160
Total Water Fund Expenditures	36,227,785	42,479,190	39,594,380	42,531,380	44,274,850
Revenue Over (Under) Expenditures	1,722,142	(1,205,490)	(719,500)	(1,114,200)	474,160
Transfer to (from) Reserves	1,722,142	(1,205,490)	(719,500)	(1,114,200)	474,160
Total full-time positions	183	184	184	185	185
Total part-time positions	29	29	29	37	37
Total FTE positions	202.75	*203.75	203.75	**206.75	206.75

\* The 2005 Budget included an additional Electrician II for Ozonation.

\*\* The 2006 Budget includes an additional Plant Operator and eight (8) limited Interns.

For additional information on the Water & Sewer Utility Departments visit <http://www.wichita.gov/>!



## WATER & SEWER

*The Water and Sewer Department supplies and distributes high quality water, and collects and treats wastewater for the City of Wichita. Services provided include pumping and purifying water, maintaining the water distribution and wastewater collection systems, treating wastewater, managing facilities and planning for future needs, all with the most responsible use of financial resources.*